

Amendments to the Claims

Please amend claims 1, 3, 4, 6, 20-22, 24, 37, 38 & 40 and cancel claims 18, 36 & 39 as set forth below. In accordance with current amendment practice, all pending claims are reproduced below. The changes in the amended claims are shown by underlining (for added matter) and strikethrough/double brackets (for deleted matter).

1. (Canceled).

2. (Currently Amended) A method for reconfiguring a routing network, the routing network being part of a publish/subscribe system, the method comprising:

quiescing the routing network to preserve a first-in first-out ~~ordering~~
delivery order quality to clients of data messages within the routing network; and

reconfiguring the quiesced routing network, while preserving the first-in
first-out delivery order quality to clients of messages within the reconfigured
routing network. ; ~~and~~

~~wherein said quiescing further comprises quiescing control messages~~
~~within said routing network prior to said reconfiguring.~~

3. (Currently Amended) The method of claim 2, wherein said routing network comprises at least one of a logging network or a sequencing network, said logging network ~~including~~ for logging a message to persistent storage within the routing network prior to delivery of the message to one or more clients of the network, and said sequencing network ~~comprising~~ for sequencing a message at a node of the routing network with other messages received by the network prior to delivery of the message to one or more clients of the network, wherein ~~said the~~ method further comprises quiescing of said control messages, the quiescing of control messages comprising comprises quiescing any new logging acknowledgment message or sequencing acknowledgment message within said logging network or sequencing network, respectively.

4. (Currently Amended) The method of claim 2, A method for reconfiguring a routing network comprising:

~~quiescing the routing network to preserve a first in first out ordering of data messages within the routing network;~~

~~reconfiguring the quiesced routing network; and~~

wherein said quiescing comprises sending a quiesce message from a root node to all children nodes thereof using an existing routing network configuration.

5. (Original) The method of claim 4, wherein when a node of said routing network receives the quiesce message, the node begins queuing any new data messages received from a client thereof, forwards the quiesce message to any children nodes thereof, and sends a quiesce acknowledgment to its parent node, and wherein once the root node has received a quiesce acknowledgment from all children nodes, all data messages in a sub-tree defined from the root node have been quiesced.

6. (Currently Amended) The method of claim 2, ~~wherein said routing network is part of a publish/subscribe system, and~~ wherein said reconfiguring is transparent to both publishers and subscribers of said publish/subscribe system.

7. (Previously Presented) The method of claim 2, wherein said routing network comprises a continuously available broker network.

8. (Previously Presented) The method of claim 2, wherein said quiescing comprises propagating a quiesce message from a root node across a spanning tree of said routing network, said quiesce message preventing any new data messages from being published for routing across said spanning tree.

9. (Original) The method of claim 8, wherein each node of said spanning tree responds to said quiesce message by sending a quiesce acknowledgment message to its parent node, and wherein after sending said quiesce acknowledgment message, any new data message received from a client of said node is queued at said node.

10. (Canceled).

11. (Previously Presented) The method of claim 8, wherein said quiescing of control messages comprises sending a quiesce special message from said root node to a special node of said routing network, said special node of said routing network comprising one of a logger node or a sequencer node.

12. (Original) The method of claim 11, wherein upon receipt of said quiesce special message at said special node, said special node returns a quiesce special acknowledgment message to said root node, and wherein upon receipt of said root node of said quiesce special acknowledgment message, said control messages within said routing network have been quiesced.

13. (Original) The method of claim 9, wherein said reconfiguring comprises sending a quiesce complete message from said root node to nodes of said spanning tree, wherein said spanning tree comprises an existing spanning tree configuration, and then sending a configure message to said nodes using a new spanning tree configuration, thereby accomplishing said reconfiguration.

14. (Previously Presented) The method of claim 2, wherein said reconfiguring comprises reconfiguring said quiesced routing network transparent to any clients of said routing network, and wherein said routing network comprises one of a logging routing network wherein messages are logged for guaranteed delivery, or a sequencing routing network wherein messages are sequenced for ordered delivery.

15. (Original) The method of claim 14, wherein said network is part of a publish/subscribe system supporting content-based subscription, and wherein said method is used in combination with a method for routing messages within said routing network, said method for routing comprising routing a message to one or more clients of said network, said routing being based on data content of said message irrespective of any destination information that may be within said message.

16. (Original) The method of claim 15, wherein said routing comprises logging said message at at least one logging node within said network before delivering said message to said one or more clients of said network, said logging comprising storing said message in persistent storage.

17. (Original) The method of claim 14, further in combination with a method for routing messages within the routing network, said routing method comprising sequencing a message at a node of the routing network with other messages received by the routing network to produce an ordering of message delivery within the routing network, and delivering the message to one or more clients of the routing network while maintaining the ordering of message delivery.

18. (Canceled)

19. (Canceled)

20. (Currently Amended) A system for reconfiguring a routing network, the routing network being part of a publish/subscribe system, the system comprising:

means for quiescing the routing network to preserve a first-in first-out ordering delivery order quality to clients of data messages within the routing network; and

means for reconfiguring the quiesced routing network, while preserving the first-in first-out delivery order quality to clients of messages within the reconfigured routing network. ; and

~~further comprising means for quiescing control messages within said routing network prior to reconfiguration thereof.~~

21. (Currently Amended) The system of claim 20, wherein said routing network comprises at least one of a logging network or a sequencing network, said logging network including a special logger node for logging a message to persistent storage within the routing network prior to delivery of the message to one or more clients of the network, and said sequencing network comprising a special sequencing node for sequencing a message within the routing network with other messages received by the network prior to delivery of the message to one or more clients of the network, wherein the system further comprises means for quiescing control messages, the means for quiescing ~~of the control messages comprises~~ comprising means for quiescing any new logging acknowledgment message or sequencing acknowledgment message within the logging network or sequencing network, respectively.

22. (Currently Amended) The system of claim 20, ~~A system for reconfiguring a routing network comprising:~~

~~means for quiescing the routing network to preserve a first in first out ordering of data messages within the routing network;~~

~~means for reconfiguring the quiesced routing network; and~~

wherein said means for quiescing comprises means for sending a quiesce message from a root node to all children nodes thereof using an existing routing network configuration.

23. (Original) The system of claim 22, further comprising means for queueing any new data messages received from a client of a node after the node receives the quiesce message, and for forwarding the quiesce message to any children nodes of said node, and for sending a quiesce acknowledgment to its parent node, wherein once the root node has received a quiesce acknowledgment from all children nodes, all data messages in a sub-tree defined from the root node have been quiesced.

24. (Currently Amended) The system of claim 20, ~~wherein said routing network is part of a publish/subscribe system, and~~ wherein said means for reconfiguring comprises means for reconfiguring the quiesced routing network transparent to both publishers and subscribers of said publish/subscribe system.

25. (Previously Presented) The system of claim 20, wherein said routing network comprises a continuously available broker network.

26. (Previously Presented) The system of claim 20, wherein said means for quiescing comprises means for propagating a quiesce message from a root node across a spanning tree of said routing network, said quiesce message preventing any new data messages from being published for routing across said spanning tree.

27. (Original) The system of claim 26, further comprising means, at nodes of said spanning tree, for sending a quiesce acknowledgment message to its parent node in response to receipt of said quiesce message, and for queueing any new data message received from a client of said node after sending said quiesce acknowledgment message.

28. (Canceled).

29. (Previously Presented) The system of claim 27, wherein said means for quiescing control messages comprises means for sending a quiesce special message from said root node to a special node of said routing network, said special node of said routing network comprising one of a logger node or a sequencer node.

30. (Original) The system of claim 29, further comprising means for returning a quiesce special acknowledgment message from said special node upon receipt of said quiesce special message, wherein said routing network has been quiesced upon receipt at said root node of said quiesce special acknowledgment message.

31. (Original) The system of claim 27, wherein said means for reconfiguring comprises means for sending a quiesce complete message from said root node to nodes of said spanning tree, wherein said spanning tree comprises an existing spanning tree configuration, and thereafter, for sending a configure message to nodes of a new spanning tree configuration, thereby accomplishing said reconfiguration.

32. (Previously Presented) The system of claim 20, wherein said means for reconfiguring comprises means for reconfiguring said quiesced routing network transparent to any clients of said routing network, and wherein said routing network comprises one of a logging network wherein messages are logged for reliable routing, or a sequencing network wherein messages are sequenced for ordered delivery.

33. (Original) The system of claim 32, wherein said network is part of a publish/subscribe system supporting content-based subscription, and wherein said system is used in combination with a system for routing messages within said routing network, said system for routing messages comprising means for routing a message to one or more clients of said network, said means for routing being based on data content of said message irrespective of any destination information within said message.

34. (Original) The system of claim 33, wherein said means for routing comprises means for logging said message at at least one logging node of said network before delivering said message to said one or more clients of said network, said means for logging comprising means for storing said message in persistent storage.

35. (Original) The system of claim 32, further in combination with a system for routing messages within the routing network, said routing system comprising means for sequencing a message at a node of the routing network with other messages received by the routing network to produce an ordering of message delivery within the routing network, and means for delivering the message to one or more clients of the routing network while maintaining the ordering of message delivery.

36. (Canceled)

37. (Currently Amended) A system for reconfiguring a publish/subscribe system comprising:

a routing network adapted to receive published messages for forwarding to subscribers; and

said network being further adapted to quiesce data messages and control messages within said network in response to a reconfigure command to preserve a first-in first-out ~~ordering~~ delivery order quality to clients of data and control messages within the routing network, and to then reconfigure the routing network once data messages and control messages have been quiesced, while preserving the first-in first-out delivery order quality to clients of messages within the reconfigured routing network.

38. (Currently Amended) An article of manufacture comprising:

at least one computer usable medium having computer readable program code means embodied therein for effecting reconfiguring of a routing network, the routing network being part of a publish/subscribe system, the computer readable program code means in the article of manufacture comprising:

computer readable program code means for causing a computer to effect quiescing the routing network to preserve a first-in first-out ~~ordering~~ delivery order quality to clients of data messages within the routing network;

computer readable program code means for causing a computer to effect reconfiguring the quiesced routing network, while preserving the first-in first-out delivery order quality to clients of messages within the reconfigured routing network. ; and

~~wherein the quiescing comprises quiescing control messages within the routing network prior to the reconfiguring.~~

39. (Canceled)

40. (Currently Amended) The article of manufacture of claim [[39]] 38, wherein said publish/subscribe system includes at least one special node within said routing network, said at least one special node comprising one of a logging node or a sequencing node, wherein said logging node is employed to log messages to persistent storage, and said sequencing node is employed to sequence messages for ordered delivery.

41. (Original) The article of manufacture of claim 40, wherein said computer readable program code means for causing a computer to effect reconfiguring comprises computer readable program code means for causing a computer to effect reconfiguring the quiesced routing network transparent to both publishers and subscribers of said publish/subscribe system.

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